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ABSTRACT

The Word Meaning section of the Metropolitan Readiness Test, Form A, was questioned as a true measure of the capabilities of culturally disadvantaged children. Therefore, an attempt was made to compare the Metropolitan Reading Readiness Test with a test in which as many objects as possible were renamed to coincide with the language of the students being tested. In order to test this two alterations were made to the Metropolitan Test. First, nine items on the original test were modified to reflect greater cultural relevance. Second, a test in which all items were redesigned was constructed. Both were administered to 180 first grade students by their individual teachers and scores were compared with initial scores on the original Metropolitan. The two modified tests were administered to the same students a second time as a check for reliability. Scores were significantly higher for the culturally modified tests. These results seem to support the statement that use of regional or colloquial language expressions of children will increase children's scores on a reading readiness test. Both the partially and completely modified tests are included in the appendixes. (Author/MKM)

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THE EFFECT OF VARIATIONS OF THE METROPOLITAN READING READINESS TEST UPON SCORES OF CULTURALLY DISADVANTAGED CHILDREN

by

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May, 1975

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THE ABSTRACT

TITLE: The Effect of Variations of the Metropolitan Reading Readiness Test Upon Scores of Culturally Disadvantaged Children.

The Word Meaning section of the Metropolitan Readiness Test, Form A, was questioned as a true measure of the capabilities of culturally disadvantaged children. Two alterations were made to test this. First, nine items on the original Metropolitan were modified to reflect greater cultural relevance. Second, a test in which all items were redesigned was constructed. Both were administered and compared with initial scores on the original Metropolitan. All tests were administered to 180 first grade students by their individual teachers. The partially changed and completely changed tests were administered three weeks after the original unchanged Metropolitan. Seven days later, the two modified tests were administered to the same students a second time as a check for reliability.

Scores were significantly higher for the culturally modified tests. Scores on the partial change, when compared with initial scores on the original Metropolitan, resulted in a t-value of 6.5. Scores on the complete change, when compared with the Metropolitan, resulted in a t-value of 9.6. (d.f. = 178)

These results support the statement that use of regional or colloquial language expressions of children increased student's scores on the standardized Metropolitan Reading Readiness Test.

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THE EFFECT OF VARIATIONS OF THE METROPOLITAN READING READINESS TEST UPON SCORES OF CULTURALLY DISADVANTAGED CHILDREN

OVERVIEW OF THE PROJECT

The Metropolitan Readiness Test, Form A, Word Meaning Section, is designed to measure a child's accumulated verbal concepts. It is intended to present pictures that can be described by a single word. The child, recognizing the association, marks the appropriate picture from three choices. The teacher is expected to use the test scores to classify her students as to their readiness to do first grade work. Also, the results may be used to indicate instructional procedures leading to formal work in reading. (6, pp. 14, 15)

However, some of the pictures in this section are described in terms unfamiliar to some children. Others are almost obsolete. The correct response for many of the items depends upon experiences the child may or may not have had.

While it is understood that children should be taught the proper name for things, many children find perfectly good substitutes which are agreed upon and used effectively by large numbers of people. These children should not be penalized for such substitution on nationally standardized tests.

This study concerns the design and evaluation of two culturally modified tests which were administered to seven first grade classes at Ivanhoe School, Gary, Indiana. The results of these tests were then compared with scores on the Metropolitan Readiness Test, Form A, Test 1, Word Meaning. The same directions for administering the Metropolitan Test were used in all three tests. (6, pp. 4-5). The first modification included nine item changes. The second modification involved a complete

change toward a more culturally relevant content. The rationale for these changes follow.

MODIFICATIONS FOR NINE ITEMS OF THE METROPOLITAN

Since it was thought that the Word Meaning Section of the Metropolitan Readiness Test, Form A was not a true measure of the capabilities of culturally disadvantaged children, nine questionable items were renamed. The remaining seven items were not changed because there is no more culturally relevant expressions to describe them. The following is an explanation of the changes made in the numerical order of its appearance on the original test. A complete copy is included in the Appendix.

Item 1. The pictures in this item are a gorilla, moose and emu. The student is asked to "Mark the moose".

Looking thru the literature written for and about children such as animal story books and animal picture books, the moose is not a favored subject of authors. However, television documentaries and weekly productions such as "Wild Kingdom", "World of Survival", "Wonderful World of Disney", and "Animal World" are excellent media for close, almost first hand observation of all kinds of animals. In addition the cartoon character "Bullwinkle" has become nationally known through the T. V. media. But again, the moose is not a favored subject.

The moose at the Brookfield Zoo or Lincoln Park Zoo in Chicago, Illinois, or the moose at the Michigan City, Indiana Zoo, are the three local possibilities for this researcher's students to view a live moose. Since the researcher will not have the opportunity to take the students on a field trip to the Zoo in order to introduce them to a live moose before the test

is given during the third week of school, the child's exposure is dependent upon the kindergarten emphasis or parental concern. Neither of these sources may be adequate to provide this experience.

While the test item remained the same, the description was changed, to "Bullwinkle" as the most culturally relevant description for the children being tested. The students were asked to "Mark the animal like Bullwinkle".

Item 2. The pictures in this item are a globe, a pair of gloves, and a kitchen stove. The students are asked to "Mark the globe" on the Metropolitan. However, many first grade children have not been formally taught the term "globe." Some kindergarten and first grade classrooms have a globe on display, but few use the word "globe".

With the current emphasis and general interest in space travel, there comes to the television screen many stories and pictures of the Earth. There is much talk about asteroids, stars, moons, planetoids, light years, lift off and acceleration for example. "Space Angel" is a cartoon space adventure where many of these terms and others are used frequently in telling the story, and a part of the story telling is an explanation of new terms. The Earth is pictured under various circumstances such as "cloud cover" and "meteor storm". "Lost in Space" is another popular television series that pictures the heavenly bodies as a part of the story content. Although references are made to "our planet", "Earth", and "terra firma", the students may not form a positive association with the globe as pictured on the test.

Again the object "globe" was kept, but was renamed. Since on the test a picture is used to show a miniature Earth, it was decided that the term "World" would be used instead of the term "globe".

The students were asked to "Mark the picture of the World".

Item 3. The pictures in this item are a Bulldog, a Pekinese and a Collie. The students are asked to "Mark the Collie".

"Collie" is the name of the breed of one of the most famous dogs in the United States. Lassie, a Collie, is the star of a number of full length movies that used the name "Lassie" as the title or a part of the title. There is a television series by that name, and a series starring Lassie called "Jeff's Collie".

In talking to a number of students, it was learned that the name used by the people in the movies to identify the dog is the name the children use to identify the breed as well as the dog.

Although the breed name is found in the title of this series, it is unused and unlearned because the dog's name fills the child's need for both identifications.

The students were asked to "Mark the dog like Lassie".

Item 6. The pictures in this item are of a robot, a stewardess, and a pilot. The students are asked to "Mark the pilot".

Rocket ships of varying degrees of sophistication are seen in movies and cartoons that children watch. One television series features a space ship flying in for a landing on Earth, and a "Martian" stepping out in a space suit with antennae on the helmet, much like those on the head of the robot on the test. As-

tronauts, or rocket ship pilots, wear more clothes and much larger and complicated head wear than airplane pilots.

After asking a number of students over a period of two or three years what they thought the first picture in row 6 was called, this researcher found more than half the students called the robot an astronaut. Technically, an astronaut is the pilot of a rocket ship. The word airplane was added to the description, since the child who identifies the robot incorrectly as an astronaut will have two legitimate objects from which to choose.

The students were asked to mark the airplane pilot, hoping the term "airplane" will help in narrowing his choices.

Item 7. The pictures in this item are of a man apparently standing knee deep in a hole and holding a shovel, an aquarium filled with water, fish, rocks, etc. and a beehive on a stand with two bees flying nearby. The students are asked to "Mark the aquarium".

Aquarium is a term not generally used by young children. Kindergarten and first grade students may see one in school for the first time in their lives. If the kindergarten teacher stocks and keeps an aquarium in the classroom without naming such, the children usually refer to it as the "bowl" or "tank" where the pretty fish live. The students were asked to "Mark the fish tank".

Item 8. In this item, there are three house facades. One with shingles, the second with brick, the third with stone. The students are asked to "Mark the stone house".

The words, "made of", were added to this item in an attempt to parallel the language of stories commonly read to very young

children such as "The Three Pigs". In this story, for instance, one pig built a house made of sticks, another built a house made of straw and the most resourceful pig built a house made of brick. It is hoped that the child will be discriminating in his choice rather than simply marking the first house in the row.

The students were asked to "Mark the house made of stone".

Item 10. The pictures in this item are of an eagle in flight, a moccasin and a duck. The students are asked to "Mark the moccasin".

The moccasin is a style of shoe not popularly worn today except as house wear. These are usually called houseshoes or house slippers. The term "slipper" was substituted for the term "moccasin".

The students were asked to "Mark the slipper".

Item 13. The pictures in this item are of a pair of spectacles, a rocking chair and a spinning wheel. The students are asked to mark the spectacles.

Unless today's children have been exposed to a vary old great grandmother or great grandfather, or they have been exposed to some old movies where one of the old characters has occasion to mention, ask or discuss them, the term spectacles would be foreign. In this area, a first grader would be too young to have taken advantage of the television re-runs of "The Real McCoys" starring Walter Brennan. Mr. Brennan played the part of an elderly farmer who frequently asked for his "specs" when he wanted to read or examine something closely. A more common usage is glasses.

The students were asked to "Mark the eyeglasses".

Item 16. The pictures in this item are a hoop being twirled by a hand holding a small stick, a horseshoe and a hind leg of a horse. The students are asked to "Mark the hoof".

"Hoop" and "hoof" have only the final sound to distinguish them. If the first grader's auditory discrimination is excellent and he can distinguish (inaudibly) between the two words when he considers the three pictures of this item, and, if he can identify the hoop as a toy used in the manner pictured, then, he might mark the correct picture.

The hoola-hoop is a toy that was popular before the present first graders were born. Even then, they were not used as pictured on the test. Only students with parents or grandparents skilled enough to demonstrate its use would be likely to have seen a hoop used as pictured or relate it to any of the present day toys. The horseshoe is the third picture in this item. A horseshoe is a rare sight in the city. Sometimes it is used in a game as part of recreational programs at city parks or settlement houses. Sometimes gentlemen are seen pitching horseshoes in back yards and vacant lots.

In this instance, the students were asked to "Mark the horse's hoof".

These nine items were changed and administered along with the other seven unchanged items of the original Metropolitan three weeks after the administration of the original intact Metropolitan.

In addition, a complete modification of all 16 items of the Metropolitan was designed to be more in tune with the cultural background of the students. This was administered for comparison with both the standard and partially revised versions of the Metropolitan Test.

The following is a description of this third test. The students were asked to identify pictures in the same way as for the Metropolitan Readiness Test, Form A, and the partially revised test. The examiner named an object and the students selected the correct picture from among the three pictures shown.

A copy is shown in the Appendix.

Item 1 shows three living plants, a blossom with two leaves and a bud, a tree in full foliage, and a potted plant with five leaves. The student was asked to identify the potted plant. The term 'potted' is the key to distinguishing the correct object. These three plants were chosen because the student has seen them, even if he has not been required to describe them.

Item 2 shows a pumpkin, a squash, and a jack-o-lantern. These objects are familiar to the student because of the association with halloween and harvest time. They are seen as part of displays in stores, at school and in the windows of homes in the neighborhood. Squash and pumpkin are pictured as a part of the Cornucopia or Horn of Plenty, in newspapers and magazines. The student will be familiar enough with the three items to make a judgement. The student was asked to identify the squash.

Item 3 shows a hoof, paw and a human foot. The student was asked to identify the paw which resembles that of a bear or large dog.

Item 4 shows a walnut, acorn and an ear of corn with the shucks partially pulled away. They are all edible and must be opened in some way to be eaten. The student was asked to identify the corn, hoping he will be listening carefully and will make the distinction between corn and acorn.

Item 5 shows fruit, vegetables and a small bouquet of flowers. The child was asked to identify the vegetables and will have to know from prior experience that the set that includes onions and carrots is categorized as vegetables rather than the bouquet or the apple, pear and grapes.

Item 6 shows a set of six scattered numerals, six scattered letters and a crab. The student was asked to identify the 'numerals', a term he may have learned as another word for numbers.

Item 7 shows objects which are worn on the hand. The student was asked to identify the mitt, which is a 'sound alike' for the familiar mitten he has worn.

Item 8 shows a sail boat a canoe and a gun boat. The student was asked to identify the canoe.

Item 9 shows a sleigh, pictured without a horse, a sled and a scooter. Since the sled and scooter are toys, the child may eliminate them when asked to identify the sleigh. He must listen to the whole word in order to hear the difference between sleigh and sled.

Item 10 shows three glass containers, a jug, bottle and jar. The student was asked to mark the bottle. He must know that the bottle and jug both have small openings, but the jug has a handle.

Item 11 shows three vehicles with wheels. The student was asked to identify the locomotive. He may only know the picture as 'engine', but may recognize the motor cycle and wagon and make the correct response.

Item 12 shows objects which are used to till or work the soil, a pick, shovel and a rake. The spade may be recognized as a shovel, and the rake is commonly used as an example of an object beginning with the sound 'r' makes. The child was asked to identify the pick.

Item 13 shows water pictured in three scenes. A lake, a waterfall, and a puddle on the street. The student was asked to mark the puddle which is a commonly used name for a familiar scene.

Item 14 shows a seal, skunk and a raccoon. The student was asked to mark the raccoon. The seal and skunk may be identifiable from cartoons and nature films, but the mask of the racccon will be the major clue which is commonly recognized.

Item 15 shows walking aides, and an easel. The child may identify the easel as not being a walking stick, it may be a known object or most probably he eliminates the other two objects as not being easels. He was asked to identify the easel.

Item 16 shows geometric shapes. A five sided shape was pictured with a volcano and a question mark. The student was asked to identify the pentagon.

This complete modification of the Metropolitan Tests was administered to the same students three weeks after the original unchanged Metropolitan was administered. Each teacher administered the test to her own class according to identical directions.

The unaltered Metropolitan Test was administered during the third week of school in September. The tests were scored by the individual teacher and the results were collected. The two other tests were

TABLE I

Table of Means, S. D., and Correlations

N = 180

	Metro	Partial	Complete	Part. Day 7	Complete Day 7
Metro-politan	Mean 8.8 S.D. 2.7				
Partial Change	r = .65	Mean 11.2 S.D. 2.2			
Complete Change	r = .58	r = .67	Mean 12.5 S.D. 2.3		
Partial Day 7	r = .66	r = .92 (reliability)	r = .73	Mean 11.4 S.D. 2.3	
Complete Day 7	r = .68	r = .68 (reliability)	r = .95	r = .74	Mean 12.5 S.D. 2.3

S.D. = Standard Deviation
r = Correlation Coefficient
N = Number of Students

administered three weeks later, seven days apart. The tests were scored, rescored, recorded by classes, and then compiled into summary of test scores by classes.

INTERPRETATION OF DATA

The data collected are shown in Tables I and II. Table I shows the correlation coefficient for the Metropolitan Test compared with both partial modification and the complete modification. Table II shows t-test scores to determine the significance of test score differences.

The information shown in Table I suggests that there was a high reliability for both modifications as shown by the test-retest correlation.

r = .92 for partial modification test-retest.

r = .95 for complete change test-retest.

The correlation between the Metropolitan and the complete change was .58. The correlation between the Metropolitan and the partial change was .64. This suggests that 34% of variance is accounted for between the Metropolitan and Complete change, and 42% of variance is accounted for between Metropolitan and Partial change. Another way of saying this is that the changes in the Metropolitan introduced 64% new variance through the complete change, and 58% new variance through the partial change. This suggests that the changes indeed introduced significant new variances to the Metropolitan. By design, these variances were to be more indicative of children's reading skills and less a measure of their cultural background. This suggests that if the variances can be justified as variances attributed to reading skills and not cultural background, the new tests are better indicators of reading achievement than the culturally biased Metropolitan.

TABLE II

t-Score results between Metropolitan Partial and Complete Change

	Metropolitan	Partial Chance
Partial Change	t = 6.5*	
Complete Change	t = 9.6**	t = 3.6*

Df. = 178

* Sig. at .01
** Sig. at .001

Table II shows that scores were increased on the Partial Modification test with a significance beyond the .001 level. This suggests that there is a real difference between the Metropolitan and the Partial modification in favor of the Partial.

The difference between the Metropolitan and the Complete change was also significant beyond the .001 level, again in favor or the Complete change.

These results suggest that indeed reading scores were increased by modifying the content of the test to more closely fit the cultural background of the students.

SUMMARY AND CONCLUSIONS

In this study, an attempt was made to compare the Metropolitan Readiness Examination with a test where as many objects as possible were renamed to coincide with the language of the students being tested.

It was thought that failure is built into a test that uses strange or foreign words to name objects to be identified. The results of the tests with the objects renamed show the students were more successful in identifying objects than they were on the Standard Metropolitan. The results of the completely changed Metropolitan showed an even greater increase in accurate identification.

For instance, if a child is asked to identify a 'tart', and his parents, peers and the books he reads refer to the same object as 'pie', he will not make the proper identification. Thus, when using regional language or colloquial expressions to speak to children, we can expect understanding on a higher level than when 'standard' or 'textbook' language is used. When examiner and student are in agreement as to the names for things, then there is communication.

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APPENDIX A

DIRECTIONS FOR ADMINISTERING TEST

Directions for Administering Test

Before distributing the test forms, say to the pupils: "Children, we are going to do some work today with pictures on these worksheets I have for you. (Hold up a test form.) I am going to give each of you one of these booklets and you will use a crayon to mark with. You must listen very carefully while I tell you what to do. Now, write your name in the space at the bottom of the page."

a. Now, look at the first row of pictures here. (Point to it on a test booklet.) I'm going to tell you to mark one of the pictures in this row by drawing a cross or an 'X' on it. (Show on the board the kind of mark to be made.) Look at each picture as I name it. Here is a book (pointing), a clock (pointing), and a calendar (pointing). Now mark the calendar. (Pause) Did you find it? (Check to be sure each pupil has marked the right picture.) You should have drawn a cross on the picture of the calendar." (Illustrate on the chalkboard or on the test page.)

b. "Put your finger on the next row. It shows a sailboat, a windmill, and a bottle (pointing). "Mark the windmill." (Be sure each pupil has found the windmill and has marked it correctly.)

c. "Put your finger on the next row. Mark the tent." (Make sure each pupil has marked the tent.)

"Now you have learned what you are to do. From now on, you are to work all by yourself. I cannot give you any more help, and you are not to do any talking. Just listen to what I say and then put a mark on the right picture."

1. "Put your finger on the next row. Mark the animal like Bullwinkle." (Pause 15 seconds. Between items say: "Put your finger on the next row." Pause 15 seconds after each item unless all have obviously marked in less time.

2. "Mark the picture of the world."

3. "Mark the dog like Lassie."

"Now turn your page over like this." (Demonstrate and help pupils who have difficulty.

4. "Mark the walnut."
5. "Mark the yarn."
6. "Mark the airplane pilot."
7. "Mark the fish tank.
8. "Mark the house made of stone."
9. "Mark the compass."
10. "Mark the slipper."

"Now turn to the next page, like this." (Demonstrate)

Directions for Administering Test - Page 2.

11. "Mark the knitting."
12. "Mark the toboggan."
13. "Mark the eyeglasses."
14. "Mark the blueberry"
15. "Mark the umpire."
16. "Mark the horse's hoof."

At the discretion of the teacher, a very short break may be taken here - within the classroom - before the next part of the test is started.

"Now turn the page over like this and write your name and class number on the top line." (Demonstrate)

1. "Mark the potted plant."
2. "Mark the squash."
3. "Mark the paw."
4. "Mark the corn."

"Now turn the page over like this." (Demonstrate)

5. "Mark the vegetables."
6. "Mark the numerals."
7. "Mark the mitt."
8. "Mark the canoe."
9. "Mark the sleigh."
10. "Mark the bottle."

"Now turn the page over like this." (Demonstrate)

11. "Mark the locomotive."
12. "Mark the pick."
13. "Mark the puddle."
14. "Mark the raccoon."
15. "Mark the easel."
16. "Mark the pentagon."

When the test is finished, say "Stop. Put your crayon down."

Collect the test booklets.

APPENDIX B

SUMMARY OF TEST SCORES

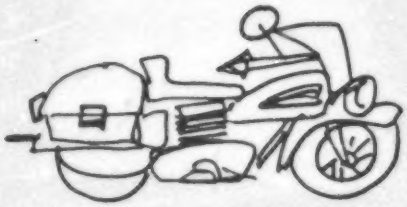
Summary of Test Scores

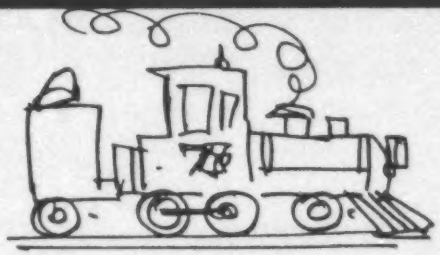
	Number of Students	Day 1 Metropolitan unchanged	Day 1 Metropolitan with changes	Day 1 Complete change	Day 7 Metropolitan with changes	Day 7 Complete change
Class 11	20	189	237	267	240	273
Class 12	26	192	278	310	283	312
Class 13	30	217	319	348	325	342
Class 14	28	343	389	425	391	429
Class 15	24	184	228	263	225	261
Class 16	27	206	290	329	290	332
Class 17	25	244	294	300	295	308

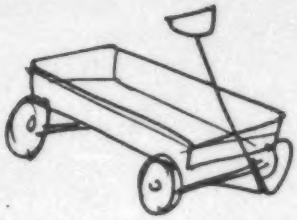
APPENDIX C

PARTIALLY MODIFIED METROPOLITAN READING READINESS TEST

11







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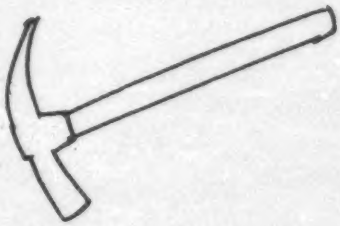

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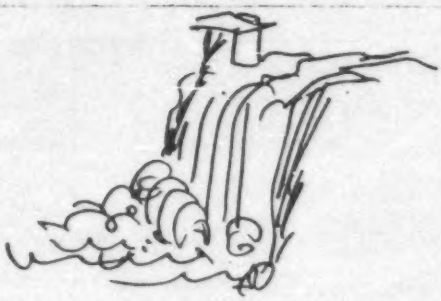

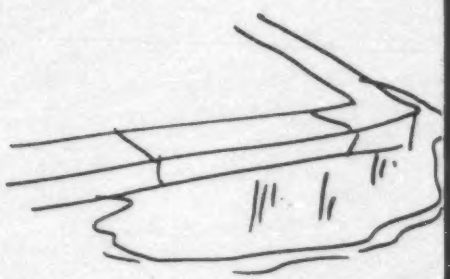

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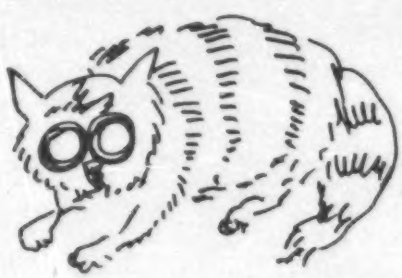

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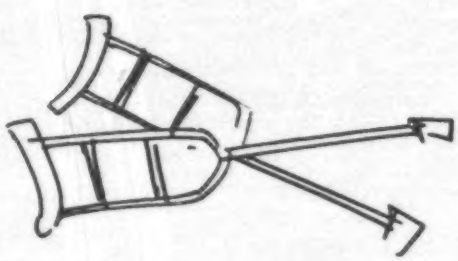

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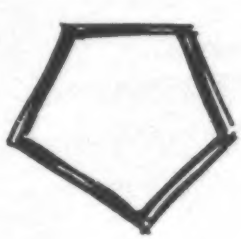

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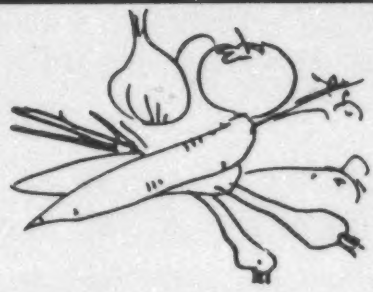

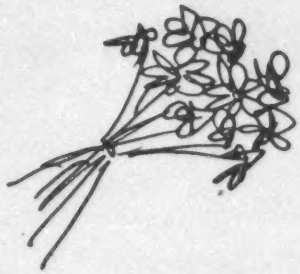

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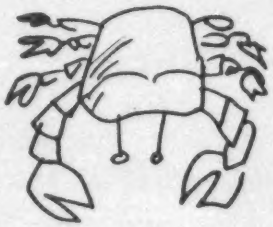

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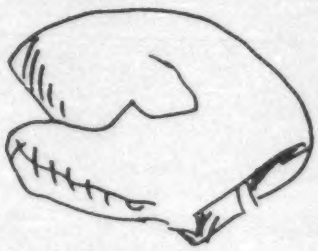

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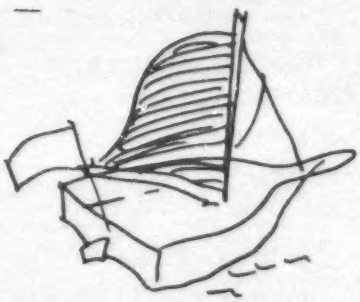

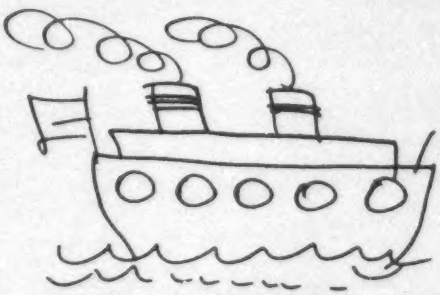

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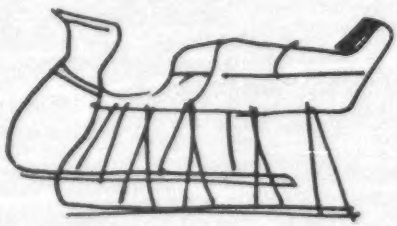

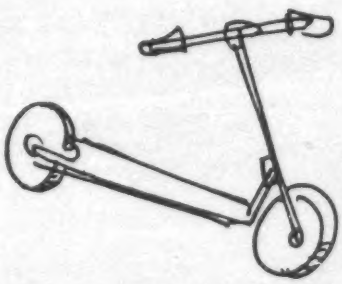

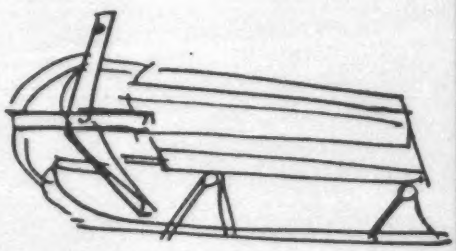

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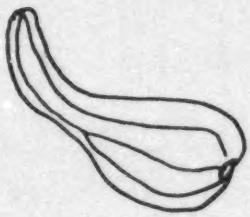

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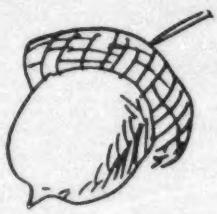

Appendix D

Completely Modified Reading

Readiness Text

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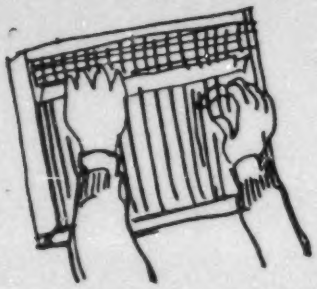

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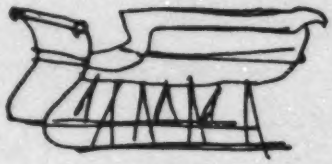

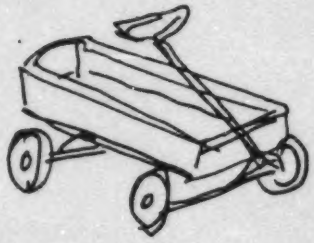

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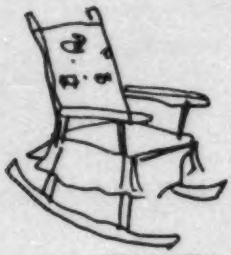

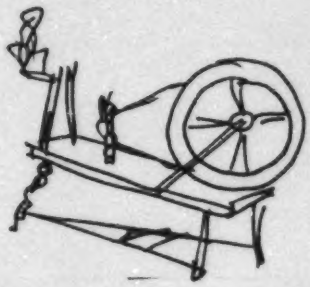

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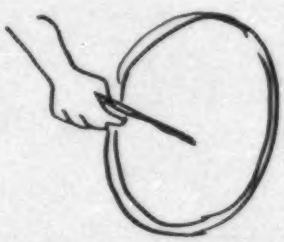

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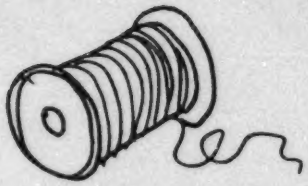

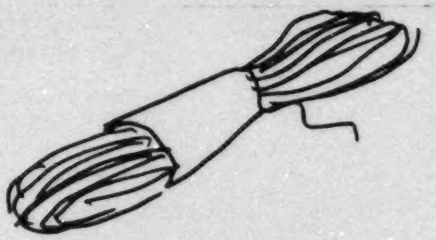

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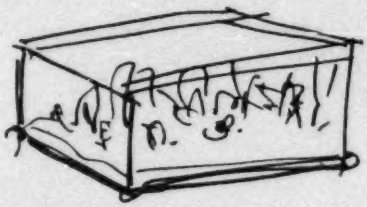

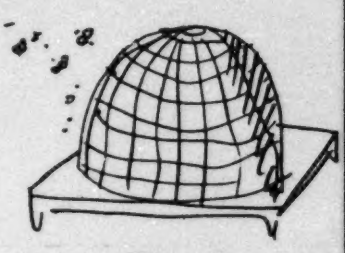

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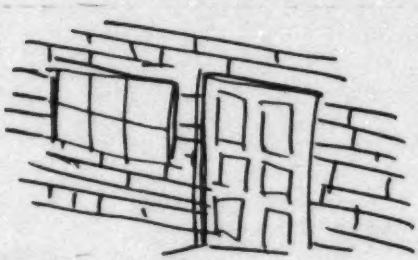

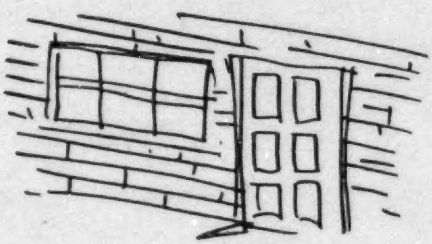

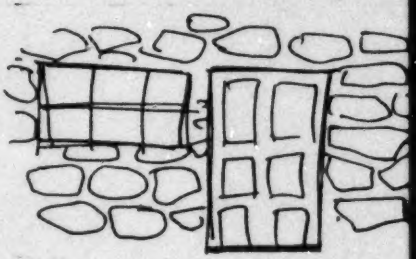

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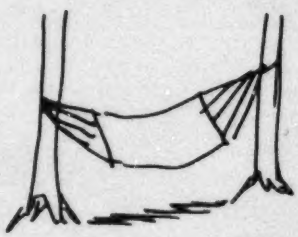

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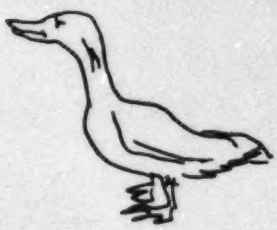

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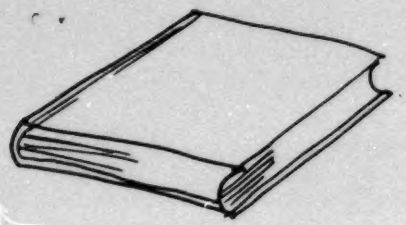

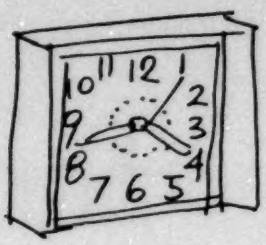

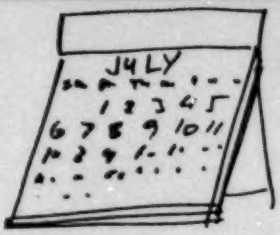

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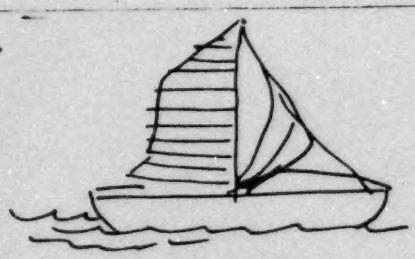

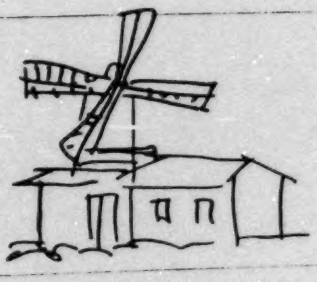

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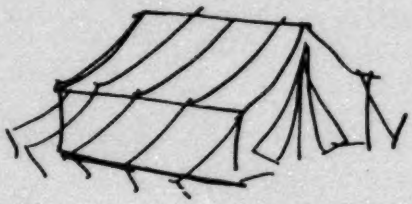

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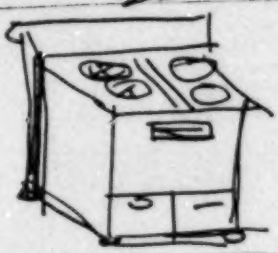

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